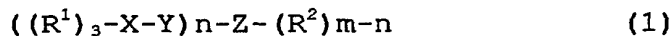


## CLAIMS

1. A catalyst for copolymerization of olefins and styrenes, which comprises:

- (A) a transition metal compound,
- (B) an oxygen-containing compound,
- (C) a compound of a general formula (1):



wherein  $R^1$  represents a hydrogen atom, a halogen atom, an aliphatic hydrocarbon group having from 1 to 30 carbon atoms, an aromatic hydrocarbon group having from 6 to 30 carbon atoms, an alkoxy group having from 1 to 30 carbon atoms, an aryloxy group having from 6 to 30 carbon atoms, a thioalkoxy group having from 1 to 30 carbon atoms, a thioaryloxy group having from 6 to 30 carbon atoms, an amino group, an amido group, or a carboxyl group,  $R^1$ 's may be the same or different, and  $R^1$ 's may be optionally bonded to each other to form a cyclic structure; X represents an element of Group 14; Y represents an element of Group 16; Z represents a metal element of Groups 2 to 13;  $R^2$  represents a hydrocarbon group; m is an integer, indicating the valency of the metal element Z; and n is an integer of from 1 to (m-1),

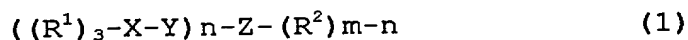
and optionally,

- (D) an alkylating agent.

2. A catalyst for copolymerization of olefins and styrenes, which comprises:

(A) a transition metal compound,

(C) a compound of a general formula (1):



wherein  $R^1$  represents a hydrogen atom, a halogen atom, an aliphatic hydrocarbon group having from 1 to 30 carbon atoms, an aromatic hydrocarbon group having from 6 to 30 carbon atoms, an alkoxy group having from 1 to 30 carbon atoms, an aryloxy group having from 6 to 30 carbon atoms, a thioalkoxy group having from 1 to 30 carbon atoms, a thioaryloxy group having from 6 to 30 carbon atoms, an amino group, an amido group, or a carboxyl group,  $R^1$ 's may be the same or different, and  $R^1$ 's may be optionally bonded to each other to form a cyclic structure; X represents an element of Group 14; Y represents an element of Group 16; Z represents a metal element of Groups 2 to 13;  $R^2$  represents a hydrocarbon group; m is an integer, indicating the valency of the metal element Z; and n is an integer of from 1 to (m-1),

and optionally,

(D) an alkylating agent.

3. The catalyst of above 1 or 2 for copolymerization of olefins and styrenes, wherein, in (C), X is carbon, Y is oxygen and Z is aluminium.

4. The catalyst of above 1 or 2 for copolymerization of olefins and styrenes, wherein the compound (C) is a reaction product of <1> at least one selected from compounds of a general formula,  $(R^1)_3-C-OR^3$ ,  $R^4-CO-R^5$  or  $R^6-CO-OR^7$ , with <2> a compound of a general formula,  $Z(R^2)_m$ . (In these formulae,  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  each represent a hydrogen atom, a halogen atom, an aliphatic hydrocarbon group having from 1 to 30 carbon atoms, an aromatic hydrocarbon group having from 6 to 30 carbon atoms, an alkoxy group having from 1 to 30 carbon atoms, an aryloxy group having from 6 to 30 carbon atoms, a thioalkoxy group having from 1 to 30 carbon atoms, a thioaryloxy group having from 6 to 30 carbon atoms, an amino group, an amido group, or a carboxyl group, and  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  may be the same or different, and  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  may be optionally bonded to each other to form a cyclic structure; Z represents a metal element of Groups 2 to 13; m is an integer, indicating the valency of the metal element Z; and  $R^2$  represents a hydrocarbon group.)

5. A catalyst for copolymerization of olefins and styrenes, which comprises:

(A) a transition metal compound,

(B) an oxygen-containing compound, and/or a compound capable of reacting with a transition metal compound to form an ionic complex,

(C1) at least one selected from compounds of a general